

## CLAIMS

What is claimed is:

- 1 1. An electrophoretic display element comprising:  
2 a first capsule including a first species of particles having a first optical property and a  
3 second species of particles having a second optical property visually different  
4 from the first optical property; and  
5 a second capsule including a third species of particles having a third optical property  
6 and a fourth species of particles having a fourth optical property visually different  
7 from the third optical property;  
8 wherein the element presents a visual display in response to the application of an  
9 electrical signal to at least one of said first capsule and said second capsule.
- 1 2. The electrophoretic display element of claim 1 wherein the first optical property  
2 and the third optical property are substantially similar in appearance.
- 1 3. The electrophoretic display element of claim 1 further comprising:  
2 in said first capsule, a fifth species of particles having a fifth optical property visually  
3 different from the first and second optical properties;  
4 in said second capsule, a sixth species of particles having a sixth optical property  
5 visually different from the third and fourth optical properties; and  
6 a third capsule including a seventh species of particles having a seventh optical property,  
7 an eighth species of particles having an eighth optical property, and a ninth species of  
8 particles having a ninth optical property.
- 1 4. The electrophoretic display element of claim 3 wherein the first, third and seventh  
2 optical properties have a white visual appearance.
- 1 5. The electrophoretic display element of claim 3 wherein the second, fourth and  
2 eighth optical properties have a black visual appearance.
- 1 6. The electrophoretic display element of claim 4 wherein at least one of the optical  
2 properties is red visual appearance.

- 1 7. The electrophoretic display element of claim 4 wherein at least one of the optical  
2 properties is green visual appearance.
- 1 8. The electrophoretic display element of claim 4 wherein at least one of the optical  
2 properties is blue visual appearance.
- 1 9. The electrophoretic display element of claim 4 wherein at least one of the optical  
2 properties is yellow visual appearance.
- 1 10. The electrophoretic display element of claim 4 wherein at least one of the optical  
2 properties is cyan visual appearance.
- 1 11. The electrophoretic display element of claim 4 wherein at least one of the optical  
2 properties is magenta visual appearance.
- 1 12. The electrophoretic display element of claim 1 wherein at least one of the optical  
2 properties comprises color.
- 1 13. The electrophoretic display element of claim 1 wherein at least one of the optical  
2 properties comprises brightness.
- 1 14. The electrophoretic display element of claim 1 wherein at least one of the optical  
2 properties comprises reflectivity.
- 1 15. The electrophoretic display element of claim 1 wherein the capsules further  
2 include a suspending fluid.
- 1 16. The electrophoretic display element of claim 15 wherein the suspending fluid is  
2 substantially clear.
- 1 17. The electrophoretic display element of claim 15 wherein the suspending fluid is  
2 dyed.
- 1 18. A display apparatus comprising:  
2 the display element of claim 1; and  
3 at least one electrode adjacent said display element;  
4 wherein the apparatus presents a visual display in response to the application of an  
5 electrical signal via said electrode to said display element.

- 1 19. The display apparatus according to claim 18, further comprising a plurality of  
2 electrodes adjacent said display element.
- 1 20. The display apparatus according to claim 18, wherein said at least one of the  
2 plurality of electrodes has a size different from others of the plurality of electrodes.
- 1 21. The display apparatus according to claim 18, wherein said at least one of the  
2 plurality of electrodes has a color different from others of the plurality of electrodes.
- 1 22. An electrophoretic display element comprising:  
2 a capsule including a first species of particles having a first optical property, a second  
3 species of particles having a second optical property visually different from the  
4 first optical property, a third species of particles having a third optical property  
5 visually different from the first and second optical properties and a fourth species  
6 of particles having a fourth optical property visually different from the first,  
7 second, and third optical properties;  
8 wherein the element presents a visual display in response to the application of an  
9 electrical signal to said capsule.
- 1 23. The electrophoretic display element of claim 22 further comprising a suspending  
2 fluid within said capsule.
- 1 24. An electrophoretic display element comprising:  
2 a capsule including a first species of particles having a first optical property, a second  
3 species of particles having a second optical property visually different from the  
4 first optical property, a third species of particles having a third optical property  
5 visually different from the first and second optical properties, a fourth species of  
6 particles having a fourth optical property visually different from the first, second,  
7 and third optical properties, and a fifth species of particles having a fifth optical  
8 property visually different from the first, second, third, and fourth optical  
9 properties;  
10 wherein the element presents a visual display in response to the application of an  
11 electrical signal to said capsule.

1 25. The electrophoretic display element of claim 24 further comprising a suspending  
2 fluid within said capsule.

1 26. A method of manufacturing an electrophoretic display, comprising the steps of:  
2 providing a first capsule including a first species of particles having a first optical  
3 property and a second species of particles having a second optical property  
4 visually different from the first optical property; and  
5 providing a second capsule including a third species of particles having a third optical  
6 property and a fourth species of particles having a fourth optical property visually  
7 different from the third optical property;

8 such that when an electrical signal is applied to at least one of said first capsule and said  
9 second capsule the element presents a visual display in response to the signal.

1 27. The method according to claim 26, wherein the step of providing a second capsule  
2 comprises providing a second capsule including a third species of particles having a third  
3 optical property and a fourth species of particles having a fourth optical property visually  
4 different from the third optical property, wherein the first optical property and the third  
5 optical property are substantially similar in appearance.

1 28. A method of manufacturing an electrophoretic display, comprising the steps of:  
2 providing a first capsule including a first species of particles having a first optical  
3 property, a second species of particles having a second optical property visually  
4 different from the first optical property and including a third species of particles  
5 having a third optical property visually different from the first and second optical  
6 properties;

7 providing a second capsule including a fourth species of particles having a fourth  
8 optical property, a fifth species of particles having a fifth optical property visually  
9 different from the fourth optical property and a sixth species of particles having a  
10 sixth optical property visually different from the fourth and fifth optical  
11 properties; and

12 providing a third capsule including a seventh species of particles having a seventh  
 13 optical property, an eighth species of particles having a eighth optical property  
 14 visually different from the seventh optical property, and a ninth species of  
 15 particles having a ninth optical property visually different from the seventh and  
 16 eighth optical properties;  
 17 such that when an electrical signal is applied to at least one of said first capsule, said  
 18 second capsule, and said third capsule the element presents a visual display in response to  
 19 the signal.

1 29. A method according to claim 28, wherein the step of providing a first capsule  
 2 comprises providing a first capsule including a first species of particles having a first  
 3 optical property, a second species of particles having a second optical property visually  
 4 different from the first optical property and including a third species of particles having a  
 5 third optical property visually different from the first and second optical properties,  
 6 wherein the second optical property is red visual appearance.

1 30. A method according to claim 28, wherein the step of providing a second capsule  
 2 comprises providing a second capsule including a fourth species of particles having a  
 3 fourth optical property, a fifth species of particles having a fifth optical property visually  
 4 different from the fourth optical property and a sixth species of particles having a sixth  
 5 optical property visually different from the fourth and fifth optical properties, wherein the  
 6 fifth optical property is green visual appearance.

1 31. A method according to claim 28, wherein the step of providing a third capsule  
 2 comprises providing a third capsule including a seventh species of particles having a  
 3 seventh optical property, an eighth species of particles having a eighth optical property  
 4 visually different from the seventh optical property, and a ninth species of particles  
 5 having a ninth optical property visually different from the seventh and eighth optical  
 6 properties, wherein the eighth optical property is blue visual appearance.

1 32. A method according to claim 28, wherein the step of providing a first capsule  
 2 comprises providing a first capsule including a first species of particles having a first

3 optical property, a second species of particles having a second optical property visually  
 4 different from the first optical property and including a third species of particles having a  
 5 third optical property visually different from the first and second optical properties,  
 6 wherein the third optical property is cyan visual appearance.

1 33. A method according to claim 28, wherein the step of providing a second capsule  
 2 comprises providing a second capsule including a fourth species of particles having a  
 3 fourth optical property, a fifth species of particles having a fifth optical property visually  
 4 different from the fourth optical property and a sixth species of particles having a sixth  
 5 optical property visually different from the fourth and fifth optical properties, wherein the  
 6 sixth optical property is magenta visual appearance.

1 34. A method according to claim 28, wherein the step of providing a third capsule  
 2 comprises providing a third capsule including a seventh species of particles having a  
 3 seventh optical property, an eighth species of particles having a eighth optical property  
 4 visually different from the seventh optical property, and a ninth species of particles  
 5 having a ninth optical property visually different from the seventh and eighth optical  
 6 properties, wherein the ninth optical property is yellow visual appearance.

1 35. A method according to claim 28, wherein the steps of providing a first capsule, a  
 2 second capsule and a third capsule comprise the steps of:

3 providing a first capsule including a first species of particles having a first optical  
 4 property, a second species of particles having a second optical property visually  
 5 different from the first optical property and including a third species of particles  
 6 having a third optical property visually different from the first and second optical  
 7 properties;

8 providing a second capsule including a fourth species of particles having a fourth  
 9 optical property, a fifth species of particles having a fifth optical property visually  
 10 different from the fourth optical property and a sixth species of particles having a  
 11 sixth optical property visually different from the fourth and fifth optical  
 12 properties; and

13 providing a third capsule including a seventh species of particles having a seventh  
 14 optical property, an eighth species of particles having a eighth optical property  
 15 visually different from the seventh optical property, and a ninth species of  
 16 particles having a ninth optical property visually different from the seventh and  
 17 eighth optical properties,

18 wherein the first, fourth and seventh optical properties are white visual appearance.

1 36. A method according to claim 28, wherein the steps of providing a first capsule, a  
 2 second capsule and a third capsule comprise the steps of:

3 providing a first capsule including a first species of particles having a first optical  
 4 property, a second species of particles having a second optical property visually  
 5 different from the first optical property and including a third species of particles  
 6 having a third optical property visually different from the first and second optical  
 7 properties;

8 providing a second capsule including a fourth species of particles having a fourth  
 9 optical property, a fifth species of particles having a fifth optical property visually  
 10 different from the fourth optical property and a sixth species of particles having a  
 11 sixth optical property visually different from the fourth and fifth optical  
 12 properties; and

13 providing a third capsule including a seventh species of particles having a seventh  
 14 optical property, an eighth species of particles having a eighth optical property  
 15 visually different from the seventh optical property, and a ninth species of  
 16 particles having a ninth optical property visually different from the seventh and  
 17 eighth optical properties,

18 wherein the third, sixth and ninth optical properties are black visual appearance.

1 37. A method according to claim 28, wherein the steps of providing a first capsule, a  
 2 second capsule and a third capsule comprise the steps of:

3 providing a first capsule including a first species of particles having white visual  
4 appearance, including a second species of particles having red visual appearance,  
5 and including a third species of particles having cyan visual appearance;  
6 providing a second capsule including a fourth species of particles having white visual  
7 appearance, including a fifth species of particles having green visual appearance,  
8 and including a sixth species of particles having magenta visual appearance; and  
9 providing a third capsule including a seventh species of particles having white visual  
10 appearance, including an eighth species of particles having blue visual  
11 appearance, and including a ninth species of particles having yellow visual  
12 appearance.

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